

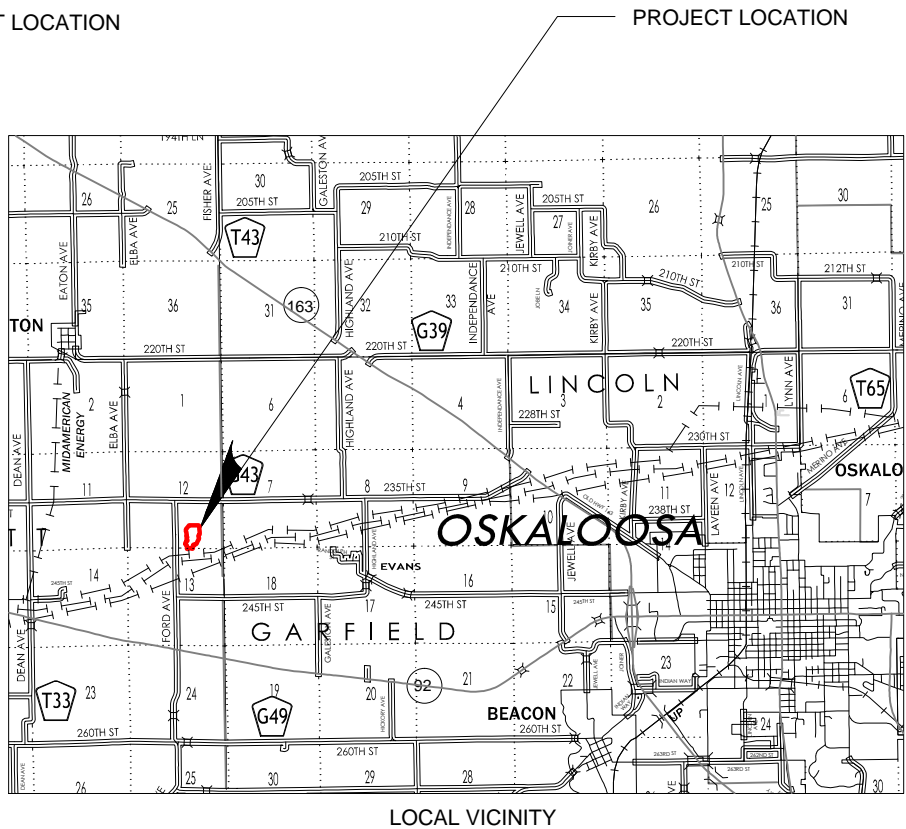
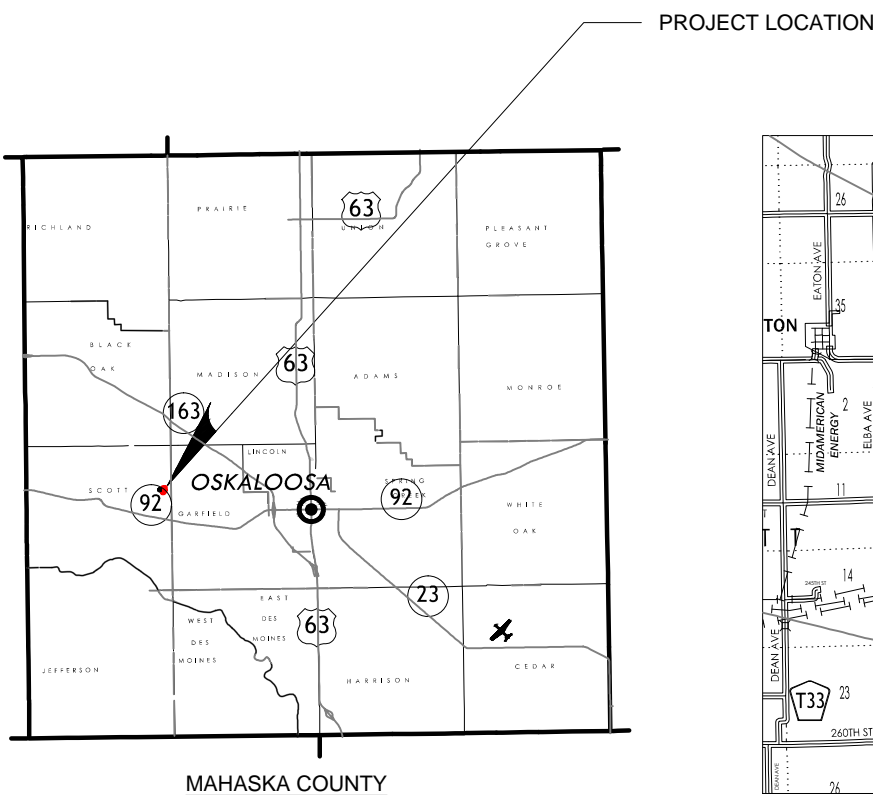
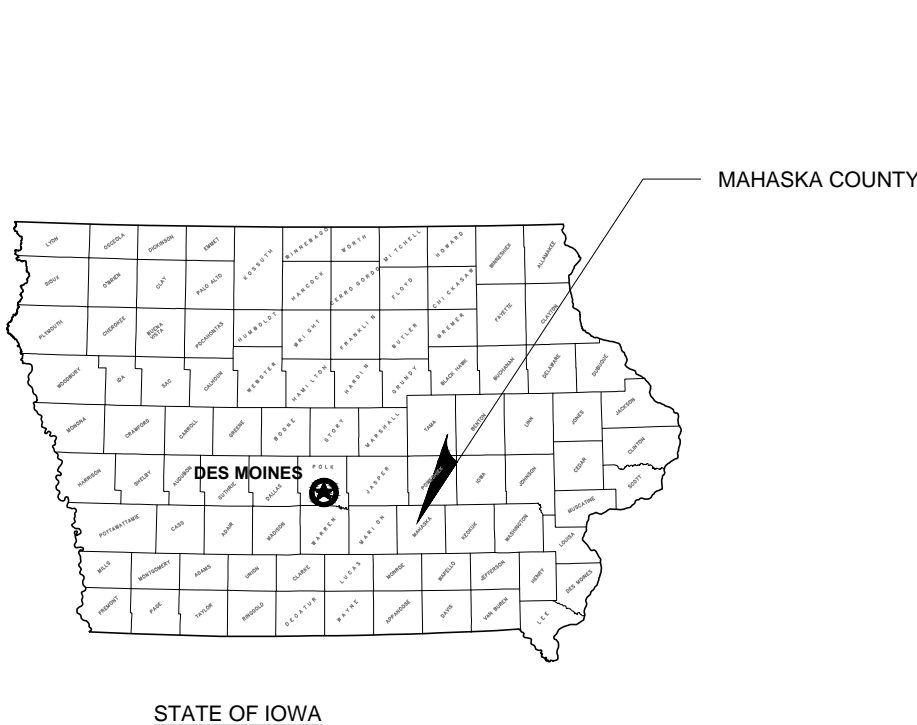
MEYER (IA-291)

AML PERMANENT SEEDING PROJECT

SECTION 12, TOWNSHIP 75 NORTH, RANGE 17 WEST, MAHASKA COUNTY

DIVISION OF SOIL CONSERVATION AND WATER QUALITY
IOWA DEPARTMENT OF AGRICULTURE AND LAND STEWARDSHIP

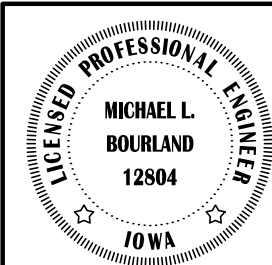
FUNDED BY:
U.S. DEPARTMENT OF THE INTERIOR
OFFICE OF SURFACE MINING RECLAMATION AND ENFORCEMENT
GRANT NO: S15AF2016



PREPARED FOR:
DIVISION OF SOIL CONSERVATION & WATER QUALITY
IOWA DEPARTMENT OF AGRICULTURE & LAND STEWARDSHIP
HENRY A. WALLACE BUILDING
502 E. 9TH STREET
DES MOINES, IOWA 50319
(515) 281-4246

ENGINEER:
MICHAEL L. BOURLAND, P.E.
MINES & MINERALS BUREAU
TEL: (515)-242-6130
E-MAIL: mike.bourland@iowaagriculture.gov

INDEX OF SHEETS:
1 COVER SHEET
2 PROJECT NOTES
3 SEEDING AREA PLAN



I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa

Signature: *Michael L. Bourland* Date: 09-15-2016

Name (printed or typed): MICHAEL L. BOURLAND

License Number: 12804

My license renewal date is: 12-31-2017

Pages or sheets covered by this seal: All Sheets

FILE: MM/01 AML SEEDING PROJECTS/2016_FALL/MEYER

REVISION: 00-00-00

ISSUED: 09-15-2016

CHKD. BY: WJG

DRAWN BY: MLB

DESIGN BY: MLB

DESCRIPTION:

DATE:

REVISION:

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DIVISION OF SOIL CONSERVATION
AND WATER QUALITY
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MEYER AML PERMANENT SEEDING
PROJECT

SHEET

1

OF

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COVER SHEET

MEYER AML PERMANENT SEEDING PROJECT -- FALL 2016

- GENERAL:
1. FOLLOW ALL STANDARD AND SUPPLEMENTAL SPECIFICATIONS SET FORTH BY THE DIVISION OF SOIL CONSERVATION AND WATER QUALITY (HEREINAFTER “DIVISION”). COPIES OF APPLICABLE STANDARD SPECIFICATIONS WILL BE PROVIDED OR MADE AVAILABLE UPON REQUEST.
 2. PROVIDE NOTICE TO THE DIVISION AT LEAST 48 HOURS PRIOR TO THE ANTICIPATED START OF WORK FOR THIS PROJECT.
 3. DIVISION OR ENGINEER SHALL BE PRESENT PRIOR TO AND AT THE COMMENCEMENT OF SEEDING TO APPROVE SEED MIX AND PLANTING EQUIPMENT.

- APPLICABLE STANDARD SPECIFICATIONS INCORPORATED BY REFERENCE:
1. SECTION 02105 - MOBILIZATION, PERMANENT SEEDING
 2. SECTION 02420 - SEED BED PREPARATION, PERMANENT SEEDING
 3. SECTION 02720 - PERMANENT SEEDING

- PROJECT QUANTITIES:
1. ACTUAL APPLICATION RATES FOR AGRICULTURAL LIME AND SPECIFIED NUTRIENTS HAVE BEEN DETERMINED FROM SOIL TESTING IN ACCORDANCE WITH SECTION 02420.
 2. AREAS FOR SEEDING AND SPECIFIED REPAIR AREAS HAVE BEEN DETERMINED BY THE DIVISION USING FIELD MEASUREMENTS AND/OR INFORMATION DEVELOPED AS PART OF THE ORIGINAL RECLAMATION PROJECT.

- EXECUTION, MEASUREMENT, AND PAYMENT:
1. UNLESS MODIFIED BY SUPPLEMENTAL SPECIFICATIONS PROVIDED HEREIN, EXECUTION, MEASUREMENT AND PAYMENT FOR WORK ITEMS ON THIS PROJECT SHALL BE IN ACCORDANCE WITH THE APPLICABLE STANDARD SPECIFICATIONS INDICATED.
 2. AREAS NOTED AS WET WITHOUT SEEDING, AREAS WITH LIME INCORPORATED IN UPPER 12 INCHES, AND AREAS WITH ADDITIONAL LIME ON SURFACE WILL BE FLAGGED IN FIELD AND MEASURED BY DIVISION.

- SEED MIX:
1. THE SEED MIX AND THE SEEDING RATE APPLIED ON THE SITE SHALL BE AS SPECIFIED HEREIN.

SUPPLEMENTAL SPECIFICATIONS:

1. SOIL TESTING FOR THIS PROJECT WAS PERFORMED BY THE DIVISION PRIOR TO COMMENCEMENT OF THIS WORK. AG LIME AND FERTILIZER QUANTITIES HAVE BEEN DETERMINED FROM THE RECOMMENDATIONS DEVELOPED BY THAT TESTING.
2. A TOTAL OF ABOUT 2.8 ACRES OF ACIDIC AREAS ARE INDICATED ON THE SITE PLAN. CONTRACTOR SHALL PLACE LIME AT A RATE OF 18 TONS ECCE PER ACRE AND MULCH AT A RATE OF 5 TONS PER ACRE. THESE MATERIALS SHALL BE INCORPORATED INTO THE UPPER 12 INCHES OF SOIL. THIS WORK IS TO BE COMPLETED PRIOR TO NOVEMBER 30, 2016. FINAL DISKING SHALL BE WITH THE CONTOURS AND AREAS LEFT IN ROUGH CONDITION UNTIL SEEDING. ADDITIONAL DISKING TO PROPERLY PREPARE SUBGRADE WILL BE REQUIRED IN THE SPRING PRIOR TO SEEDING. ALL DISKING COSTS ARE TO BE INCLUDED IN THE COST OF THE LIME/MULCH.
3. MINOR GRADING IS REQUIRED IN THE AREA MARKED AS TERRACE FLOW LINE REPAIR. CONTRACTOR WILL COMPLETE MINOR GRADING TO ESTABLISH POSITIVE FLOW TO INTAKE RISER. A LEVEL SHALL BE USED TO DETERMINE GRADING. THIS WORK IS TO BE COMPLETED PRIOR TO PLACEMENT OF LIME OR FERTILIZER.
4. MOWING SHALL BE PERFORMED PRIOR TO SEEDING TO FACILITATE THE BREAKDOWN AND DECAY OF EXISTING VEGETATION. USE OF A FLAIL-TYPE MOWER TO ACCOMPLISH THIS WORK IS PREFERRABLE. CONDITION OF SITE PRIOR TO SEEDING SHALL BE APPROVED BY DIVISION. IF ADDITIONAL MOWING IS REQUIRED DUE TO DELAYS BETWEEN INITIAL MOWING AND SEEDING, THIS ADDITIONAL WORK SHALL BE COMPLETED AT CONTRACTOR'S OWN EXPENSE. MOWING IS TO BE BID AS A LUMP SUM, NOT A PER ACRE BASIS.
5. FOR MEASUREMENT OF AREAS TO BE SEEDED, THE CONTRACTOR IS NOT REQUIRED TO PERFORM FIELD MEASUREMENTS AS STIPULATED IN 02720, PART 3.7 C.
6. SEEDING APPLICATION RATE SHALL BE AT THE SEEDING RATE SPECIFIED ON TABLE 1.
7. AFTER SEEDING, AREAS THAT HAD LIME AND MULCH INCORPORATED INTO THE SURFACE SHALL HAVE MULCH OR PAM-12 PLUS APPLIED TO THE SURFACE. IF MULCH IS USED, IT SHALL BE APPLIED AT A RATE OF 2 TONS PER ACRE AND CRIMPED IN AT THE SURFACE. IF PAM IS USED, IT SHALL BE APPLIED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATION, INCLUDING ADJUSTING RATE FOR SLOPE CONDITIONS.
8. THE TEMPORARY CROSSING CONNECTING THE NORTH PORTION SHALL BE REMOVED AFTER COMPLETING ALL WORK ON THE NORTH PORTION OF THE SITE AND PRIOR TO LEAVING THE SITE. THE REMOVED TILE SHALL BE PROPERLY DISPOSED OFF SITE BY CONTRACTOR AND THE SOIL SHALL BE PLACED ALONG THE BANKS IN NON-SEEDED AREAS.
9. ALL WORK OF THIS CONTRACT SHALL BE COMPLETE BY MAY 30, 2017.

TABLE: ESTIMATED QUANTITIES

Item No.	Description	Spec. Section	Quantity	Units
1	Mobilization	2105	1	Lump Sum
2	TSC Removal	2420	1	Lump Sum
3	Terrace Repair	2420	1	Lump Sum
4	Mowing	2420	1	Lump Sum
5	Ag Lime , Acid Areas (ECCE)	2420	50	Ton
6	Mulch, Acid Areas	2420	2.8	Acre
7	Ag Lime Seeding (ECCE)	2720	50	Ton
8	Nitrogen (N)	2720	668	Pound
9	Phosphorous (p)	2720	1837	Pound
10	Potassium (K)	2720	4676	Pound
11	Permanent Seeding	2720	16.6	Acre
12	Seeding Mulch	2720	2.8	Acre
13	Removal of Temporary Crossing	2420	1	Lump Sum

Notes, Per soil test recommendations obtained by the DIVISION:

1. Applied fertilizer rates are to be: N-P-K = 40-110-280 Lbs. per acre. Fertilzier is to be applied within one week of seeding.
2. Incorporation of agricultural lime and mulch for acid areas is to be completed no later than November 30, 2016. The agricultural lime is to be applied at a rate of 18 tons ECCE per acre and the mulch is to be applied at a rate of 5 tons per acre. These materials are to be incorporated into the upper 12 inches of soil.
3. Agricultural lime is to be applied at a rate of 3 ton ECCE per acre over entire site and can be placed at any time after mowing and prior to seeding.
4. TSC means "Temporary Sediment Controls"

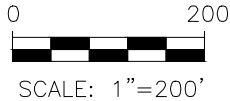
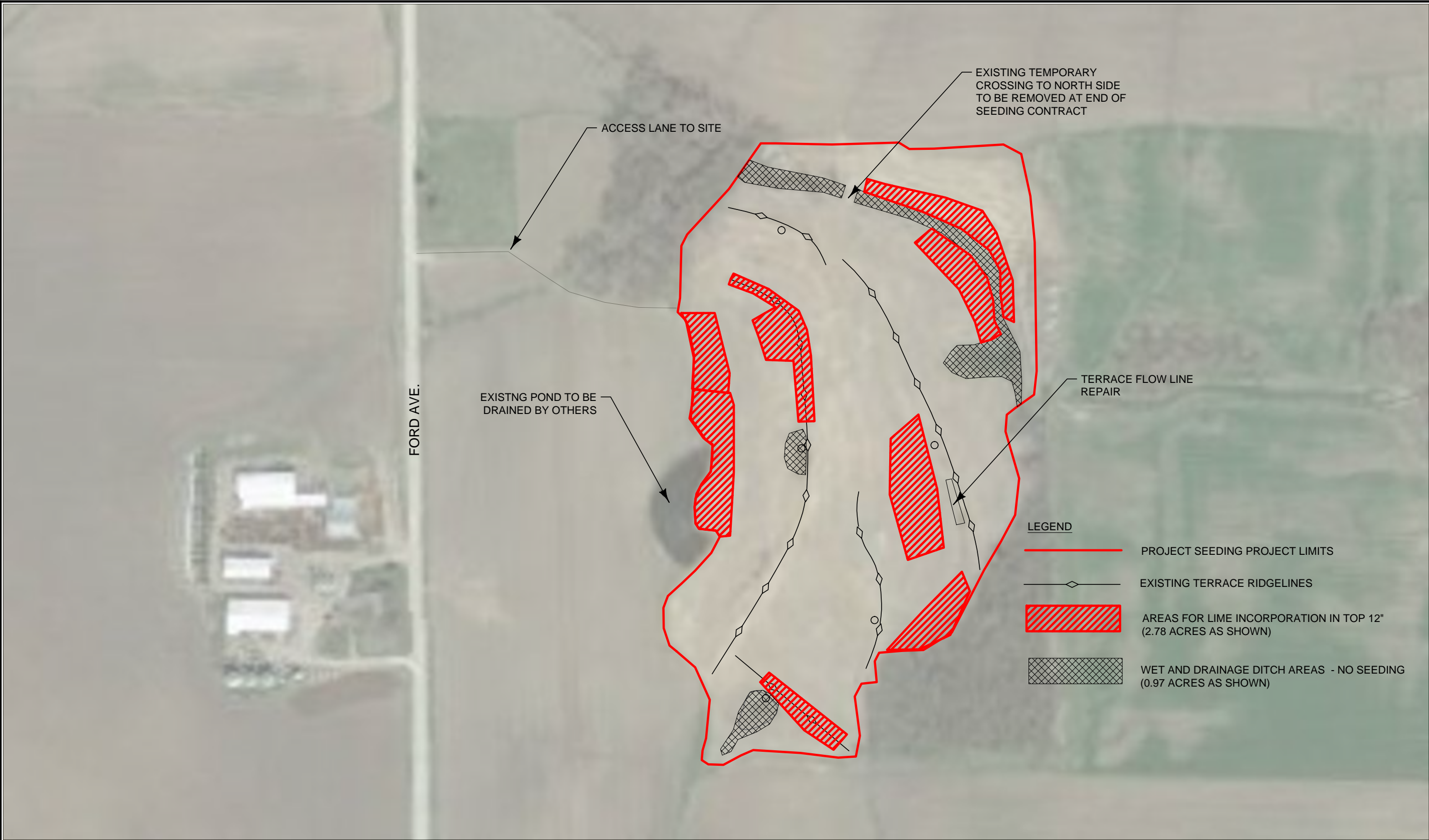
TABLE 1.: Upland Seed Mix with Pollinator Species,


Common Name	Scientific Name	Seeding Rate (Lb. PLS/ac)
Timothy	<i>phleum pretense</i>	7.0
Indian grass	<i>sorgastrum nutans</i>	5.0
Orchard grass	<i>dactylic glomerata</i>	5.0
Canada Wildrye	<i>Elymus canadensis</i>	6.0
Big bluestem	<i>Andropogon gerardii</i>	6.0
Purple prairie clover	<i>dalea purpurea</i>	0.3
Alsike clover	<i>trifolium hybridum</i>	3.0
Alfalfa	<i>medicago sativa</i>	5.0
Swamp Milkweed	<i>Asclepias incarnate</i>	0.3
Common Milkweed	<i>Asclepias syriaca</i>	0.3
Foxglove Beardtongue	<i>Penstemon digitalis</i>	0.2
Common Mt. Mint	<i>Pycnanthemum virginianum</i>	0.2
Showy Goldenrod	<i>Solidago speciose</i>	0.3
Smooth Blue Aster	<i>Symphotrichum laeve</i>	0.2
Golden Alexanders	<i>Zizia aurea</i>	0.3
Culver's Root	<i>Veronicastrum virginicum</i>	0.2
TOTAL		39.3

Note: Substitutions are allowed with prior Division approval.

Spring Seeding Period: April 1 to May 30

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						PROJECT NOTES					
						SHEET 2 OF 3					



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